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EXAMINER	
THOMPSON, JAMES A	
ART UNIT	**PAPER NUMBER**
2625	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/961,256	NARA, WATARU	
	Examiner	Art Unit	
	James A. Thompson	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 January 2006 and 22 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 September 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 22 December 2005 has been entered.

Response to Arguments

2. Applicant's arguments filed 22 December 2005 have been fully considered but they are not persuasive.

Regarding page 10, line 6 to page 11, line 15: Firstly, Applicant's arguments with respect to the generated threshold are based upon the present amendments to the claims, and not the claims as recited immediately prior to the final rejection, mailed 27 September 2005. Secondly, Applicant's arguments with respect to the allegation that Mortimore (US Patent 5,740,428) and Tse (US Patent 6,198,845 B1) do not teach "the provision of a choice between performing and non-performing of a background noise removal in a scanner" are defective since "the provision of a choice between performing and non-performing of a background noise removal in a scanner" is not recited in the present claims. Applicant is respectfully reminded that, although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26

USPQ2d 1057 (Fed. Cir. 1993). Furthermore, even though similar language is found in the present amendments to claims 12 and 24, said language is not found in claims 12 and 24 prior to said final rejection.

Regarding page 11, lines 16-20: On 04 August 2005, Applicant submitted a duplicate copy of the IDS Applicant submitted on 04 March 2002. Examiner initialed beside each reference and signed said duplicate copy. Said duplicate copy was placed as part of the record and mailed out with the final office action on 27 September 2005. Upon Applicant's request, the original IDS, submitted on 04 March 2002, was also initialed and signed and was mailed out with the Advisory Action on 10 January 2006.

Regarding page 11, line 21 to page 12, line 9: The present amendments to the claims have been entered. Examiner has fully considered the present amendments to the claims. Corresponding prior art rejections are set forth in detail below.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1, 6-8, 11, 14, 19-21, 26-28 and 30 are rejected under 35 U.S.C. 102(a) as being anticipated by Tse (US Patent 6,198,845 B1).

Regarding claims 1, 14 and 26: Tse discloses a device (figure 13 of Tse) comprising a photoelectric conversion unit (figure 13(300) of Tse) which scans a document (figure 1 of Tse) and supplies image data of the scanned document (column 8, line 51 of Tse); a background detecting unit (figure 13(100(portion)) of Tse) which detects a background level of the image data (column 3, lines 53-56 of Tse) so as to produce a background level value indicative of the background level (column 3, lines 32-35 of Tse); an image processing unit (figure 13(100(portion)) of Tse) which applies one or more types of image processing to the image data so as to generate image processed data (figures 11a-11d and column 7, line 66 to column 8, line 5 of Tse), and applies image processing identical to said one or more types of image processing to the background level value (figure 10c and column 7, lines 49-65 of Tse) so as to generate a threshold (column 7, lines 42-48 of Tse); and a background removal unit (figure 13(100(portion)) of Tse) which removes background noise from the image processed data according to the generated threshold (column 6, lines 22-30 of Tse). The image processing unit applies dynamic range modification to the image (column 7, lines 49-65 of Tse) using the image background gray level (BKG) previously determined (column 7, lines 64-65 of Tse). The dynamic range is modified such that all pixels with gray levels greater than the background gray level are saturated white (column 7, lines 42-47 of Tse). Thus, when the background removal unit produces the output values of the input image

(column 8, line 67 to column 9, line 2 of Tse), the background noise is removed.

Further, the dynamic range adjusting system (figure 13(100) of Tse) is embodied in a computer (column 9, lines 12-13 of Tse). Thus, the background detecting unit, image processing unit, and background removal unit each correspond to a particular portion of the computer, along with the associated working memory and embodied software.

Further regarding claim 14: The device of claim 1 performs the method of claim 14.

Further regarding claim 26: The various units of the device recited in claim 1 are the corresponding means of the device recited in claim 26.

Regarding claims 6 and 19: Tse discloses that said image processing unit applies said one or more types of image processing to the image data and the detected background level through one operation (column 7, lines 46-50 of Tse). The dynamic range modification is performed to both the background level (column 7, lines 46-47 of Tse) and the image data (column 7, lines 47-50 of Tse) as a single combined operation (figures 11a-11d and column 7, line 66 to column 8, line 5 of Tse).

Regarding claims 7 and 20: Tse discloses a combining unit (figure 13(100(portion)) and column 9, lines 12-13 of Tse) which includes the detected background level into the image data as part of the image data prior to the image processing by said image processing unit (column 7, lines 46-49 of Tse). The detected background level is included as a part of the image data since pixels which have a gray level value above the detected background level are saturated white (column 7, lines 46-49 of Tse). The combining unit corresponds to the portion of

the controller, along with the associated embodied software, that performs the functions of the combining unit (column 9, lines 12-13 of Tse).

Regarding claims 8 and 21: Tse discloses that said combining unit generates a gate signal indicative of a position of the detected background level included in the image data (figure 15 and column 10, lines 13-22 of Tse).

Tse further discloses a background data extracting unit (figure 13(100(portion)) and column 9, lines 12-13 of Tse) which extracts the detected background level (column 8, lines 48-54 and lines 63-65 of Tse) from the image data in response to the gate signal (column 9, line 65 to column 10, line 3 of Tse). The detected background level is calculated (column 8, lines 63-65 of Tse) based on the image data histogram (figure 4 and column 8, lines 48-54 of Tse), which is produced using a gate signal indicative of a position of an analyzed pixel within an analysis window (column 9, line 65 to column 10, line 3 of Tse), and thus the position of the detected background level.

Regarding claim 11: Tse discloses a printer unit (figure 13(400) of Tse) which prints an image on a paper sheet according to the image data from which the background noise is removed by said background removal unit (column 8, lines 44-47 of Tse).

Regarding claims 27 and 30: Tse discloses a device (figure 13 of Tse) comprising a background detecting unit (figure 13(100 (portion)) and column 8, lines 63-65 of Tse) which detects a background level of the image data (column 3, lines 53-56 of Tse); a threshold generating unit (figure 13(100(portion)) of Tse) which determines a threshold based on the detected background level (column 7, lines 46-47 of Tse) so as to produce a threshold level value indicative of the threshold (column 3,

lines 32-35 of Tse); a clipping unit (figure 13(100(portion)) of Tse) which clips to the threshold the image data above the threshold (column 7, lines 46-47 of Tse); an image processing unit (figure 13(100(portion)) of Tse) which applies one or more types of image processing to the clipped image data so as to generate clipped image processed data (figures 11a-11d and column 7, line 66 to column 8, line 5 of Tse), and further to the threshold level value (figure 10c and column 7, lines 49-65 of Tse) so as to generate a processed threshold (column 7, lines 42-48 of Tse); and a background removal unit (figure 13(100 (portion)) of Tse) which removes background noise from the clipped image processed data according to the processed threshold (column 6, lines 22-30 of Tse). The image processing unit applies dynamic range modification to the image (column 7, lines 49-65 of Tse) using the image background gray level (BKG) previously determined (column 7, lines 64-65 of Tse). The background gray level is the threshold above which the gray level values are clipped (column 7, lines 46-47 of Tse), thus the dynamic range is modified such that all pixels with gray levels greater than the background gray level are saturated white (column 7, lines 42-47 of Tse). Thus, when the background removal unit produces the output values of the input image (column 8, line 67 to column 9, line 2 of Tse), the background noise is removed.

Further regarding claim 30: The device of claim 27 performs the method of claim 30.

Regarding claim 28: Tse discloses a combining unit (figure 13(100(portion)) and column 9, lines 3-7 of Tse) which includes the threshold into the clipped image data as part of the clipped image data prior to the image processing by said image

processing unit (column 7, lines 46-49 of Tse). The detected background level, and thus the threshold, is included as a part of the clipped image data since pixels which have a gray level value above the detected background level are saturated white (column 7, lines 46-49 of Tse). The combining unit corresponds to the portion of the computer, along with the associated embodied software, that performs the functions of the combining unit (column 9, lines 12-13 of Tse).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2-3 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tse (US Patent 6,198,845 B1) in view of Shirasawa (US Patent 5,689,590).

Regarding claims 2-3 and 15-16: Tse does not disclose expressly that said one or more types of image processing includes γ conversion.

Shirasawa discloses γ conversion processing (figure 3(121-124) and column 5, lines 63-67 of Shirasawa) in a background image data removal system (column 6, lines 44-48 of Shirasawa), wherein said γ conversion processing is performed at an end of one or more types of image processing (figure 3(110,111) and column 5, lines 43-45 and lines 63-66 of Shirasawa).

Tse and Shirasawa are combinable because they are from the same field of endeavor, namely removal of background noise in digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform γ conversion processing at an end of one or more types of image processing, as taught by Shirasawa, said one or more types of image processing being the one or more types of image processing taught by Tse. The motivation for doing so would have been to correct for inaccuracies in the sensors and color separated image data (column 5, lines 32-39 of Shirasawa). Therefore, it would have been obvious to combine Shirasawa with Tse to obtain the invention as specified in claims 2-3 and 15-16.

7. Claims 4-5, 9-10, 17-18, 22-23 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tse (US Patent 6,198,845 B1) in view of Kamo (US Patent 5,465,160).

Regarding claims 4 and 17: Tse does not disclose expressly that said one or more types of image processing includes MTF correction.

Kamo discloses performing MTF correction on scanned image data (column 10, lines 29-32 of Kamo).

Tse and Kamo are combinable because they are from the same field of endeavor, namely processing and correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform MTF correction on the scanned in image, as taught by Kamo. The motivation for doing so would have been to provide the proper frequency response for the image data scanned in by the scanner, thus improving the image quality. Therefore, it would have been

obvious to combine Kamo with Tse to obtain the invention as specified in claims 4 and 17.

Regarding claims 5 and 18: Tse does not disclose expressly that said one or more types of image processing includes a filtering process.

Kamo discloses performing a filtering process on the scanned digital image data (column 10, lines 29-32 of Kamo). Both shading correction and edge smoothing (column 10, lines 29-32 of Kamo) are types of filtering processes.

Tse and Kamo are combinable because they are from the same field of endeavor, namely processing and correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform a filtering process on the scanned image data, as taught by Kamo. The motivation for doing so would have been improve the overall image quality. Therefore, it would have been obvious to combine Kamo with Tse to obtain the invention as specified in claims 5 and 18.

Regarding claims 9 and 22: Tse discloses that said combining unit includes the detected background level into the image data at a position of a blank period of the image data (figures 11a(white portions of images); column 7, lines 46-49; and column 10, lines 13-22 of Tse). Pixel positions within specific windowed portions of the scanned image data are analyzed (column 10, lines 13-22 of Tse). For certain positions (figures 11a(white portions of images) and column 7, line 67 to column 8, line 1 of Tse), specifically the portions that are originally white, the detected background level is included as the image data at said positions (column 7, lines 46-49 of Tse).

Tse does not disclose expressly that said one or more types of image processing includes a filtering process.

Kamo discloses performing a filtering process on the scanned digital image data (column 10, lines 29-32 of Kamo). Both shading correction and edge smoothing (column 10, lines 29-32 of Kamo) are types of filtering processes.

Tse and Kamo are combinable because they are from the same field of endeavor, namely processing and correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform a filtering process on the scanned image data, as taught by Kamo. The motivation for doing so would have been improve the overall image quality. Therefore, it would have been obvious to combine Kamo with Tse to obtain the invention as specified in claims 9 and 22.

Regarding claims 10 and 23: Tse discloses that said combining unit includes the detected background level into the image data at a position of a valid period of the image data (figures 11d(white portions of images); column 7, lines 46-49; and column 10, lines 13-22 of Tse). Pixel positions within specific windowed portions of the scanned image data are analyzed (column 10, lines 13-22 of Tse). For certain positions (figures 11d(white portions of images) and column 8, lines 4-5 of Tse), specifically the portions that are were not originally white but are modified to the background level, the detected background level is included as the image data at said positions (column 7, lines 46-49 of Tse).

Tse does not disclose expressly that said one or more types of image processing includes a filtering process.

Kamo discloses performing a filtering process on the scanned digital image data (column 10, lines 29-32 of Kamo). Both shading correction and edge smoothing (column 10, lines 29-32 of Kamo) are types of filtering processes.

Tse and Kamo are combinable because they are from the same field of endeavor, namely processing and correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform a filtering process on the scanned image data, as taught by Kamo. The motivation for doing so would have been improve the overall image quality. Therefore, it would have been obvious to combine Kamo with Tse to obtain the invention as specified in claims 10 and 23.

Regarding claim 29: Tse discloses that said combining unit includes the threshold into the clipped image data at a position of a valid period of the clipped image data (figures 11d(white portions of images); column 7, lines 46-49; and column 10, lines 13-22 of Tse). Pixel positions within specific windowed portions of the scanned image data are analyzed (column 10, lines 13-22 of Tse). For certain positions (figures 11d(white portions of images) and column 8, lines 4-5 of Tse), specifically the portions that are were not originally white but are modified to the background level, the detected background level is included as the image data at said positions (column 7, lines 46-49 of Tse).

Tse does not disclose expressly that said one or more types of image processing includes a filtering process; and that the included threshold has a data size larger than a filter size of said filtering operation.

Kamo discloses performing a filtering process on the scanned digital image data (column 10, lines 29-32 of Kamo). Both shading correction and edge smoothing (column 10, lines 29-32 of Kamo) are types of filtering processes.

As is well-known in the art, edge smoothing is performed locally, such as at small segments of characters (figures 13a-13c and figure 14 of Kamo). The threshold data size is throughout the background area of the entire image (figure 11d (white portion) of Tse). Therefore, the included threshold taught by Tse has a data size larger than a filter size of said filtering operation taught by Kamo.

Tse and Kamo are combinable because they are from the same field of endeavor, namely processing and correction of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform a filtering process on the scanned image data, as taught by Kamo. The motivation for doing so would have been improve the overall image quality. Therefore, it would have been obvious to combine Kamo with Tse to obtain the invention as specified in claim 29.

8. Claims 12-13 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tse (US Patent 6,198,845 B1) in view of Venable (US Patent 5,270,806).

Regarding claims 12 and 24: Tse discloses a memory unit (figure 13(220) of Tse) which stores therein scanned image data (column 8, line 51 and column 9, lines 5-11 of Tse); and a background removal unit (figure 13(100(portion)) of Tse) which removes background noise from the scanned image data stored in said memory unit (column 7, lines 42-47 of Tse).

Tse does not disclose expressly an input unit which receives a user instruction making a choice between performing of said background noise removal on the scanned image data and non-performing of said background noise removal on the scanned images; and that said background removal unit removes background noise in response to the user instruction indicative of performing of said background noise removal, and refrains from removing background noise in response to the user instruction indicative of non-performing of said background noise removal.

Venable discloses an input unit (figure 4(52) of Venable) which receives a user instruction (column 5, lines 31-41 of Venable) making a choice between performing of an image processing function on the scanned image data and non-performing of said image processing function of the scanned image data (column 7, lines 58-68 of Venable); and performing said image processing function in response to the user instruction indicative of performing said image processing function, and refraining from performing said image processing function in response to the user instruction indicative of non-performing of said image processing function (column 7, lines 58-68 of Venable). Image processing is performed with an interactive interface (column 7, lines 58-68 of Venable). If performance of a particular image processing is desired, the user simply changes a setting from the present position. If non-performance is desired, the user simply leaves said setting at the present position.

Tse and Venable are combinable because they are from the same field of endeavor, namely the processing and editing of digital color image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art

to include a user interface so that a user can select whether or not to perform a particular image processing function, as taught by Venable, wherein said image processing function is the background noise removal taught by Tse. The motivation for doing so would have been that the interactive image processing taught by Venable allows a user to perform image processing for multiple variables, thus eliminating a lot of the tedious trial and error normally required for image processing based on multiple variables (column 7, lines 47-62 of Venable). Therefore, it would have been obvious to combine Venable with Tse to obtain the invention as specified in claims 12 and 24.

Regarding claim 24: The apparatus of claim 12 performs the method of claim 24.

Regarding claims 13 and 25: Tse does not disclose expressly a controller which connects the memory unit to an external network so as to allow access to be made from the external network to the scanned image data stored in said memory unit.

Venable discloses a controller which connects the memory unit to an external network so as to allow access to be made from the external network to the scanned image data stored in said memory unit (figure 3 and column 4, lines 56-65 of Venable).

Tse and Venable are combinable because they are from the same field of endeavor, namely the processing and editing of digital color image data. At the time of the invention, it would have been obvious to connect the memory unit to an external network, as taught by Venable. The motivation for doing so would have been to allow various external workstations, print servers, and other devices to access the processed image

data, thus allowing external users access to more complex image processing services than may be available locally (column 4, lines 60-65 of Venable).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James A. Thompson
Examiner
Technology Division 2625

04 April 2006

DAVID MOORE
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